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PROTOCOLONOSPORA, A NEW GENUS OF FUNGI.

(Preliminary Note.)

GEO. F. ATKINSON AND C. W. EDGERTON.

The senior author discovered a fungous disease of the cultivated vetch during July which does not seem to have been described before, and was first observed on the stems and pods from a small patch of vetch on the Horticultural grounds of Cornell University and later collected on vetch in the fields on the University farm where it seems to be abundant and a serious pest, often being associated with an Ascochyta. On the pods it often occurs quite pure, and here it is easily seen with the unaided eye to be distinct from the disease caused by the Ascochyta. It is, however, frequently mixed, even on the pods, with this fungus, but the very characteristic spots alone serve to distinguish it.

The spots are elongated, either narrow or elliptical, sometimes with a dull purple border. On the pods they are oblique. The spores ooze out in mass and have a pale pink or flesh color, but when spread in a thin layer, form a whitish film.

The fungus is subepidermal. The epidermis is ruptured in the form of a slit through which the spores escape. The mycelium becomes brown and then black, and the epidermis is later blackened; in age the spots are black oblique lines as seen on the pods, and many of them are sterile probably through failure of the fungus to fruit.

The structure of the fungus causing this new disease of vetch is very interesting. It resembles that of species of *Corticium*. The basidia form a definite hymenium which is seated on the pseudo-parenchymatous subhymenium, which is two or three cell-layers in thickness. The nourishing mycelium extends out into the surrounding tissue of the host. The spores are sessile; and are borne on a basidium in a whorl or crown at the end. The spores are oblong to subelliptical, straight or curved, continuous, hyaline, granular, and measure $12-20 \times 3-3.5 \mu$. As the spores fall away from the basidia others are produced as shown by cultures. Conidia similar to the basidiospores are produced on slender conidiophores which are intermingled with the basidia. This character recalls that of the genus *Exobasidium*. The spores also bud in yeast-like fashion from one or both ends, rarely from the side, and the sporidia thus produced are similar to the spores.

The fungus appears to be the type of a new genus for which the name *Protocoronospora* is proposed, and a provisional diagnosis is given as follows:

Protocoronospora Atkinson and Edgerton new genus.
Stroma pseudoparenchymatous, two or three cell layers in thickness, formed by the compact branching of the mycelium, the ultimate exterior branches producing the basidia which form a hymenium. Spores sessile, hyaline, colorless, continuous, smooth, several (usually four-eight) on a basidium. Spores budding and forming sporidia similar in form. Conidia also similar in form on slender short conidiophores intermingled with the basidia.

P. nigricans Atkinson and Edgerton n. sp.—Forming narrow elongated spots on the pods, stems, leaves and bracts, spots oblique on the pods and from 2-5 mm. to 1-2 mm. Spots at first white or with purple border, later black. Stroma subepidermal, of pseudoparenchymatous cells $6-9 \mu$ in diameter, two to three cell layers in thickness. Basidia clavate to subcylindrical, $20-30 \times 6-8 \mu$, 4-8 spored. Spores sessile, and basidia continuing to form new spores, at least in artificial culture. Spores pale pink in mass, oblong to subelliptical, hyaline, continuous, smooth, granular, straight or curved, $12-20 \times 3-3.5 \mu$, usually becoming once septate on germination. Mycelium from the stroma penetrating the adjacent tissues. Parasitic on pods, stems, leaves and bracts of *Vicia sativa*.

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September 2, 1907.